

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of:	)	
	)	
Implementation of Section 304 of the	)	CS Docket No. 97-80
Telecommunications Act of 1996	)	
	)	
Commercial Availability of Navigation Devices	)	
	)	
Compatibility Between Cable Systems and	)	PP Docket No. 00-67
Consumer Electronics Equipment	)	
	)	

**A. Introduction**

Intel Corporation is the world's largest semi-conductor manufacturing company. It is a leader in the development and deployment of digital communications and computing technologies. Intel has a direct interest in seeing a competitive, standards-based marketplace for cable compatible navigation devices based on the "right to attach" proscribed by Congress. Intel is interested not only because it wants the opportunity to provide navigation devices, but because of the broader opportunities to provide a wide array of interoperable computing devices and the building blocks for those devices.

**1. Congress' Vision.** Congress codified its vision of a competitive retail market for navigation devices in Section 629 of the Communications Act (entitled "Competitive Availability of Navigation Devices"). That vision contemplates rich consumer choice and product innovation in competitive and robust markets. Congress enabled that vision

by giving all product and technology providers the right to attach their devices to cable television networks, only limiting that right to the extent necessary to prevent harm to the network or theft of service. In light of the right to attach, the only technical obstacles standing in the way of this vision are the absence of standard interfaces that remove barriers to market entry and enable interoperability and product innovation. With standard interfaces in place, Congress believed the market would respond with innovative new products that would provide rich consumer choice for consumers and direct benefits for content providers as well.

**2. Intel Shares Congress' Vision: The Digital Home Initiative.** Intel shares Congress' vision of a world where intelligent platforms and devices seamlessly interoperate in the home-networked environment, enabling consumers to enjoy any content, any place, in any device, any time, in new rich and compelling ways.<sup>1</sup> (Such products include not only computers, "smart" set top boxes, televisions, media players and recorders, game consoles, wireless tablets and peripherals, but devices we cannot even contemplate today.) Indeed, as digital communications and computing technologies advance, digital devices are both evolving and converging in response to natural market demands for integration and interoperability. To further that end, Intel actively participates in cross-industry efforts to establish cooperative networked platforms providing vastly enhanced media value within the home. In addition, Intel has worked for the past six years with content providers to create and deploy digital content protection technologies based on strict principles of interoperability and consistency with

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<sup>1</sup> It goes without saying that this should be done in authorized manners.

this vision.<sup>2</sup> Intel's vision is to enable any and all classes of digital devices to compete on a level playing field; enabling consumers to choose the products that best fit their particular needs.

## **B. Illusory Progress**

Intel previously filed comments with the FCC regarding the OpenCable Pod-Host Interface License ("PHILA"). Those comments identified several issues and obstacles to the development of an open and robust competitive market for cable navigation devices.<sup>3</sup> In addition, those comments describe how IT products, and PCs in particular, are excluded from the competitive retail market for navigation devices by the PHILA regime. Those comments remain applicable today, and will remain applicable in the future, until the PHILA regime is replaced with an offering that complies with Section 629. Intel is concerned, however, that an offering that complies with Section 629 may never materialize and PCs and other innovative devices will remain excluded. This concern is exacerbated by several facts: (i) although there is nothing preventing CableLabs from offering the private Dfast License today, CableLabs steadfastly refuses to offer it or

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<sup>2</sup> Such technologies include some the Commission may be familiar with, such as Digital Transmission Content Protection ("DTCP") offered by the 5C Entity LLC, Content Protection for Removable Media ("CPRM") and Content Protection for Pre-recorded Media ("CPPM") for DVD Audio offered by the 4C Entity LLC, and High-bandwidth Digital Content Protection ("HDCP") offered by Digital Content Protection LLC.

<sup>3</sup> In a previous FCC filing regarding PHILA, Intel outlined some principles for fostering competitive standards based markets, focusing on removing barriers to market entry. The MOU and Dfast License mark substantial progress on each of these substantive points:

- (1) Successful standards and specifications must limit required features ("normative references") to a very narrowly defined but robust interface specification.
- (2) Implementers must have design freedom to enable them to implement the technology in ways that encourage not only diversity of product offering and application, but also enable differentiation from competing products in the market place.
- (3) The specifications must be robust enough to permit innovation over time and enable features that the ultimate products' consumers will demand; and

negotiate a license using it as a guide; (ii) although CableLabs has recently updated the PHILA, the updated PHILA continues to exclude PCs; and (iii) although the Dfast License purports to open the door to a wider class of devices, close examination suggests it may still be intended to exclude PCs. Based on these and other factors discussed below, Intel is led to conclude that the progress represented by the MOU and Dfast License may be illusory at best, and more cynically, that these efforts are designed to perpetuate for as long as possible the exclusion of PCs and other innovative devices from the competitive retail market for navigation devices contemplated by Congress.

**1. IT Was Not Represented.** At the outset of this discussion, the FCC and Congress should understand that, despite Intel's repeated requests for direct participation in the process that led to the MOU and Draft Dfast License, Intel was excluded. In this context, we understand the negotiation process was closed to the *entire IT industry*. That practice continues today as work gets underway with respect to Bi-directional Digital Cable Devices. The effect of this exclusion is clearly reflected in many critical aspects of the MOU and Dfast License Agreement, which perpetuate and even complicate market barriers for IT products in the expected retail market for digital cable navigation devices. In this context, CableLabs' continued promotion of the PHILA regime, coupled with the political, procedural and legal framework under which the MOU and Dfast License has been presented, maintains the incumbents' market advantages to the detriment of Congress' vision for an effective and competitive market for navigation devices, the IT industry, technological innovation generally, and most importantly, consumer interests.

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(4) Perhaps most important, implementers must be free to self certify their products' interoperability and compliance with the specification.

**2. The Dfast License May Never Be Offered.** The Dfast License, which on the surface appears to be real progress, is hostage to the FCC taking commensurate regulatory actions with respect to the satellite industry. While we steadfastly support a “level playing field” across both cable and satellite, there is no technical, licensing or other legal reason for CableLabs to wait for the FCC to create this market uniformity before making the Dfast License available. In practice, Intel does not believe it likely that the FCC will be able to timely adopt, if ever, the sweeping regulations that the Dfast License are contingent upon even if the FCC concludes, and all interested parties agree, that the regulations are within the FCC’s jurisdiction. Similarly, even if Congress decided to act with enabling legislation, we do not see how Congress could effectively legislate in any meaningful short-term time frame. This is complicated by the fact that the MOU contemplates a *specific* regulatory outcome, and not just “*some*” regulatory outcome. In short, there is a substantial likelihood that the MOU conditions to making the Dfast License available may never be met and the Dfast License may never be made available. In the meantime, the PHILA regime and incumbent interests strengthen their grip and their stranglehold on this emerging market segment in defiance of Congress.

**3. CableLabs Must Make the Dfast License Available NOW.** Tying the availability of the Dfast License to a specific regulatory outcome that has nothing to do with the legal or technical substance of the Dfast License create artificial market advantages for products and companies that are amenable to the PHILA regime (which excludes PCs). In fairness and in order to make a good-faith effort to comply with

Section 629, CableLabs must make the Dfast License available NOW and let the encoding discussions continue independently. The Dfast License contains the necessary technical specifications, compliance rules and robustness rules to ensure content security, and, the Dfast technology itself is of CableLabs' own choosing.<sup>4</sup> Withholding the Dfast License maintains the barriers to IT and other innovative products and forces all companies wanting to enter this new market to accept the PHILA regime, which action in and of itself undermines the adoption of a solution that satisfies Section 629.

If the Dfast License is not offered now, and the current PHILA regime is adopted piece-meal by incumbent interests and other companies compelled to do products by market immediacy, the rich competitive market for navigation devices envisioned by Congress *simply will not materialize*. Instead, a highly constrained and limited market consisting only of PHILA-form-factor-anti-consumer-set-top-boxes (and TVs) dominated by incumbent manufacturers will emerge. Although this may in fact be the goal of some, including even some of those who participated in the MOU discussions, this outcome is inconsistent with the law and Congressional intent.

## **B. Competitive Barriers for IT Products Persist in the Dfast License.**

Even if the Dfast License were offered today, it needs some revision to eliminate barriers to IT products. In light of the discussion in the previous sections, Intel is concerned that some of the Dfast License provisions are designed to preclude PC

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<sup>4</sup> Although Intel has identified issues with respect to the Dfast License, some of which are discussed below, Intel believes many of the outstanding issues associated with the Dfast License can be “fixed” relatively easily, while the PHILA cannot.

participation in a competitive market for navigation devices, or at least delay that participation until long after the incumbents have both defined and entered the market.

**1. “Basic Digital Cable Products” Exclude IT Products By Definition.** While the general intent of the MOU and draft Dfast license appears to be to permit any digital product, regardless of form-factor and general-purpose capability, to implement and include basic cable functionality, the most important provisions of the Dfast License do not. Specifically, the definition of “Unidirectional Cable Products” in the DFAST License specifically excludes “interactive . . . digital television products, including, without limitation, products that are *capable* of obtaining access to video-on-demand or . . . of *using* the return path of the cable system . . .” This definition, on its face, excludes PCs which are, for example, clearly “capable” of “using” the return path of the cable system through a cable modem or otherwise. Although this definitional defect can be cured fairly easily and without prejudice to any party,<sup>5</sup> the parties to the MOU refused to make this correction despite Intel’s request.<sup>6</sup> The easiest way to keep a class of products out of a competitive market is to simply exclude them “*by definition.*”

**2. Expanding Digital Outputs.** Basic digital cable functionality is critical to any device competing to be the consumer’s “home-gateway” or “home-network-hub”. In the home-networking market, these gateway devices are positioned to define the rest of the digital-home-network. In this context, the approval of digital outputs is very important because it directly impacts the architecture of the home-network. While Intel is pleased

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<sup>5</sup> For example, by limiting the definition of Unidirectional Cable Products to “those portions of a product that implement Dfast and are Compliant”.

to see that the Dfast License anticipates the approval of new content protection technologies in a reasonable and non-discriminatory manner, we support the development of functional criteria and self-certification that will take the guess-work out of technology approvals and open the door for many protected digital outputs. Intel believes that the more approved secure digital outputs there are, the greater the innovation and development in the market place there will be.

**3. Limiting DTCP Approval is Discriminatory.** Although Intel is pleased to see that DTCP has been approved in the Dfast License as an approved content protection technology, we are very concerned by the fact that it is only approved in the Dfast License when deployed over an IEEE 1394 transport because (i) DTCP is mapped to and approved for both USB and MOST in addition to IEEE 1394, and (ii) there is work under way to map DTCP to other digital transports,<sup>7</sup> including but not limited to IP based home wired and 802.11 wireless networks, that are at the core of future product innovation. As outlined below, there simply is no technical or legal basis for this discrimination.<sup>8</sup>

**a. DTCP Protection Is Transport Agnostic.** Regardless of the transport DTCP is employed over, the same DTCP protection protocols and algorithms that define the technology as set out in its specification are still used. DTCP protection simply does not change in any material way when it is ported to a new transport.

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<sup>6</sup> Although Intel was excluded from the discussions, Intel managed to provide limited comments to participants.

<sup>7</sup> The DTCP License Agreement gives content providers the right to review DTCP technical mappings, giving them the right to object to new mappings that they feel compromise DTCP. The DTCP License Agreement is available for any interested content provider. Warner Bros. and Sony Pictures Entertainment currently have change management rights with respect to DTCP.



Unlike analog content protection technologies that may depend on the physical characteristics of the transport, DTCP is a digital technology that is designed to take advantage of the layered approach to transport specifications. There is no technical reason to discriminate against any particular mapping of DTCP. In this context, approving DTCP for IEEE 1394 alone, without approving these other transports as well, simply makes no technical sense.

**b. Robustness and Compliance Rules Apply To All DTCP Outputs.** The DTCP License Agreement, administered by the DTLA, contains Robustness Rules and Compliance Rules that resemble in many respects the Robustness Rules and Compliance Rules set out in the Dfast License. For DTCP, the Robustness Rules and Compliance Rules apply to each and every DTCP implementation, regardless of the actual permitted digital transport it is deployed on. That is, DTCP is “DTCP”, and virtually identical from a technical robustness and compliance perspective in terms of content protection, whether it is used to protect content transmitted over IEEE 1394, USB, or some other future approved digital transport. The level of protection, indeed the protection itself, is the same. In this context, approving DTCP for IEE 1394 alone makes no sense from a technical compliance or robustness perspective.

**c. Approval of DTCP for one Transport is Approval of All DTCP Protected Transports.** Although the Dfast License only approves DTCP over IEEE 1394,

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<sup>8</sup> Again, although Intel was not a party to the negotiations, Intel raised all of these issues and concerns with the parties involved. The result speaks for itself.

the *DTCP License Agreement* permits a DTCP source device to output DTCP protected content over *any approved DTCP digital transport*, which, as indicated above, today includes not only IEEE 1394, USB and MOST, but will in the future include other innovative technologies such as 802.11 wireless networks. This means that if a company offers a Basic Digital Cable Product with DTCP over IEEE 1394 as the only approved output (“Basic Cable Device 1”), Basic Cable Device 1 can nevertheless (according to both the Dfast License and the DTCP License Agreement), simply be plugged into any sink device that supports DTCP on IEEE 1394 (“DTCP Device 2”). DTCP Device 2 can then output the received protected content over *any* output permitted by the DTCP license agreement, including USB and MOST today and any other digital bus/technologies approved in the future. DTCP Device 2 can even be a simple “repeater” with no other purpose than to provide the means to permit Basic Cable Device 1 to output DTCP protected content over a non-IEEE 1394 DTCP protected transport. As there is no technical justification for this discriminatory DTCP approval,<sup>9</sup> it constitutes an effective way to either (1) disadvantage competing products outright, (2) add extra cost and design complexity to competing products, and/or (3) create opportunities to leverage further approvals for other consideration.

**d. Failure to Give General Approval is Discriminatory** In short, the

DTCP/IEEE 1394 limitation on the Basic Digital Cable Device has nothing to do

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<sup>9</sup> These facts are all well known to the parties to the negotiations, and Intel has discussed the technical and legal aspects of these items with several parties to the negotiations at length in conjunction with our specific request to them that DTCP be approved generally. Although none of the parties clearly articulated why they refused this request, it was, in the end, rejected.

security or even the actual permitted digital path. Rather, the IEEE1394 limitation is purely a functional limitation that creates barriers to entry for non-IEEE 1394 products, and threatens the development and deployment of innovative technologies that use other interconnect technologies. The effect of this restriction is to give IEEE1394/DTCP devices a distinct yet wholly unfounded competitive advantage over all other DTCP devices and slow the deployment of competing products that will be based on USB and/or wireless technologies like 802.11. That IEEE 1394 may be the transport of choice for those who negotiated the Dfast license should not dictate home-network designs for all or otherwise interfere with the goal of establishing a truly competitive market for navigation devices.

**e. Even New PHILA Gives General DTCP Approval.** Perhaps the cleanest argument that the Dfast License should approve DTCP generally is the March 10, 2003 version of the PHILA, which approves any transport protected by DTCP as an approved digital output. This sudden “change” is indeed a welcome one, and we can only speculate on why the newest PHILA takes this approach. For its part, Intel has spent substantial energy making this case to CableLabs and other interested parties, and we are pleased to see the approach adopted. If CableLabs intends to revise the Dfast License similarly, a public statement to that effect would be appreciated. The fact that this very important change now appears in the PHILA, however, is also troubling from a more fundamental perspective: PCs generally do not qualify under the current PHILA regime. This creates the

twisted scenario where PHILA-based products have an even greater competitive advantage over PCs and other innovative devices: PHILA devices will now have the additional advantage of all of the DTCP related work that Intel has done, none of which the benefits the PC directly. These factors collectively seriously undermine the PCs ability to compete directly as a home-gateway. The effect of this is to further entrench incumbent interests and create competitive disadvantages for the PC.

**4. A Note on the Encoding Rules.** Intel understands the importance of encoding rules for protecting consumer interests, and offers a few observations on the encoding rules currently under consideration. We are concerned that the substance of the encoding rules, which we support, will be swallowed by the exceptions to the general rules: 1) the proposed system contemplate a means for cable-operators to change the rules, and 2) the encoding rules don not apply to bona-fide trials (whatever that means). Together, these exceptions fundamentally empower the system operators to “change” the rules and avoid the reasonable expectations of both device manufacturers and consumers. We encourage the Commission to consider these exceptions with considerable skepticism.

#### **Summary Conclusion.**

Although the MOU and Dfast License purport to make progress with respect to some of the issues raised in our previous filings, we believe that progress is illusory unless and until the Dfast License is improved and made available to all interested

parties. Absent these actions, the PC and other innovative products will remain excluded from the market and/or seriously disadvantaged by the PHILA regime. Congress has clearly directed the FCC to make sure that the “right to attach” is realized and that a competitive and open retail market for all navigation devices, regardless of form factor, develop. In this context, CableLabs is responsible for a set of interests much larger than its own membership and incumbent device makers, and the FCC must ensure that this public trust is honored.

The IT industry was not represented at the negotiation table, and it shows.